

National body 'in jeopardy'

by John O'Leary

There was growing pessimism this week over the prospects for the establishment of a national body to oversee polytechnics and colleges — one of the main planks of the Select Committee report on higher education.

The decision to single out the proposal for a Committee for Colleges and Polytechnics for special consideration and a separate Government response had been taken as a favourable sign. But, despite last week's reference by Mr. Mark Carlisle, Secretary of State for Education, to the need to tackle the "fundamental" issue of a management structure for the public sector, it is clear that the outcome is far from certain.

Ministers are understood to foresee considerable problems in launching a national body at the same time as trying to get the trans-binary committees being formed at the

Department of Education and Science off the ground. The Government's aversion to quangos is seen as a further obstacle.

Higher education financing was one of the topics under discussion at a meeting this week attended by all four education ministers and some 60 Conservative councillors. At the meeting, organized by the Conservatives' National Advisory Committee on Education, Dr. Rhodes Boyson, Under-Secretary for Higher Education, outlined some of the concerns about the Select Committee's proposal.

The college principals' organization, the Standing Conference, which is drawing up its response to the Select Committee report next week, is likely to call for a stronger body than that envisaged by the MPs.

A background paper prepared by Mr. John Barnett, now research and information officer to the group,

says: "The proposal is much vaguer in its application than that of the Oakes Report. While accepting substantial i.e.a. membership, it seems to be steering away from representative membership." Mr. Barnett questions whether it is possible to divorce finance from planning.

The paper also draws attention to the committee's recommendation for improved statistical information in higher education, which underlines a long-standing complaint from the principals about the need for more comparable records in the different sectors.

The proposal to abolish Regional Advisory Councils is regarded as the most important in the report and is likely to be the subject of disagreement at the principals' conference next week. Mr. Barnett argues that the many problems raised in the report should not be set aside without further action.

Retired lecturers hit by pension backlog

by David Jobbins

Up to 5,000 lecturers who retired before last year's complex series of pay settlements ended may have to wait at least until March next year to receive pension arrears.

Despite union pressure the Department of Education is refusing to employ extra staff to deal with the backlog of recalculations for thousands of teachers and lecturers. Secretary of State for Education Mr. Mark Carlisle maintains this is incompatible with the Government's commitment to continued economy.

Many teachers and lecturers retired before the belated 1979 and 1980 settlements and had therefore not made pension contributions at the higher rates. Last November the Government decided that all the increases including the 4 per cent wage earner should be included in the pension calculations.

The problem facing the DES pensions branch is that this involves up to four months per individual, and that they level only salaries and not positions on the incremental scale.

The DES estimates the number of lecturers involved as only 1,500 but the National Association of Teachers in Further and Higher Education puts the figure much higher at a possible 5,000 to 6,000.

The figures are swollen by a massive increase in the numbers

in the schools and colleges making use of premature retirement compensation schemes.

The Government is prepared to protect the arrears against the effects of inflation by index-linking until the new pension regulations are announced probably next month. But this would still mean that many could lose protection between then and when they actually receive the money.

Ministers believe that the treatment is generous in that teachers and lecturers will eventually receive higher pensions than they had paid contributions for, and to demand full index-linking is excessive.

Nature's negotiating secretary Mr. Derek Welford said: "We do think it is very unfortunate that the DES has not been able to complete the reassessment before the summer 1984 normal assessments come on stream. The future of the Government and will not get their back pay until 1982 have been most severely treated."

Last week Labour education spokesman Mr. Neil Kinnock wrote to Mr. Carlisle attacking the delay.

"The failure of the Government to pay the retired teachers in direct consequence of the policy of cutting public expenditure and manpower to such an extent that it prevents your Department from discharging legal and moral duties to a substantial group for which it has pension responsibility."



An exhibition of the drawings and paintings of Evelyn Ballantine opened this week at Brighton Polytechnic. The works are from the period in which she started painting again after marrying and having children. The exhibition of her recent work runs till the end of this month.

Discretionary awards for 1978 down to 30,000

by Ngalo Crequr

The number of new discretionary awards made to students in 1977-78 dropped by 10 per cent to 30,000, according to the latest Government figures.

The report *Statistics of Education, Volume 5: Finance and Awards* shows that local education authorities in England and Wales made 373,500 full value awards in 1977-78, compared with 377,876 in 1976-77, the peak year.

A quarter of all students received a full grant from their local authority. The average value of awards was less than £3,200, the minimum contribution level. Twenty-one per cent of university students received a full grant for this reason, compared with 31 per cent of students in further education.

Spending on education in the United Kingdom, as a proportion of the gross national product, went from 5.0 in 1968-69 to a peak of 6.4 in 1975-76 to 5.5 in 1978-79, which is slightly less than the level in 1972-73. In 1978-79 about 30 per cent of all expenditure was devoted to secondary schools and 9 and 10

per cent respectively to university and student support, with 10 per cent to further education, including teacher training, adult education and polytechnics.

The near recurrent expenditure on student support in 1978-79 was £300 million, compared with £289 million in 1977-78. The average value of awards was £1,420 (non-advanced) and £2,200 (advanced) for technical, and £2,575 for a student.

The report reveals the differences between regions on education spending per head of population. North of England spent £145, Yorkshire and the North West £147 and the South West £127 and East of England £126. It does not show the value of awards for different regions, geographical areas, population, local demand and *Statistics of Education, Volume 5: Finance and Awards* published for the Department of Education and Science by HMSO, price £5.20.

Labour MPs press ministers to publish loans report

Ministers this week resisted pressure from Labour MPs to publish the report on student loans prepared at the Department of Education and Science.

In his first criticism of a "shadow" spokesman on education, Mr. Philip Whitehead, Labour MP for Derby North, challenged the Government to publish the "bizarre proposals" contained in the report, which would lead to a further decline in working-class participation in further and higher education, he said.

Dr. Rhodes Boyson, under-secretary for higher education, said that ministers were still examining the report to see whether any one of the options merited consideration in depth. At this stage the report would not be published.

In response to a question from Mr. Dennis Canavan, Labour MP for St. Albans, Dr. Boyson said that the DES had received 78 representations on the subject, 32 in favour and 46 against. Further uncertainty was cast into the public debate on the subject when Mr. Robert James, the Conservative liaison officer for higher education, addressed the National Students' conference at Polytechnic.

He said: "I should emphasize that no proposals are being considered by the Government at the present time. The proposal under consideration is the possibility of supplementing grants by loans and I am also sure that it is only a matter of time when such proposals are being taken place."

Dr. Boyson expects representations to be taken in the coming months, with a consultation on the subject emerging in the action is envisaged.

Universities are urgently planning ways to cut back departments and make other savings after being told that reductions are inescapable.

Glasgow University is recommending phasing out 140 academic posts over the next three years to meet a loss of income of £3.2m. The recommendations by the academic development committee represent a 6 per cent loss of posts. Urgent discussions are taking place with staff.

Professor Aileen Williams, principal, has told the university that there is no alternative to a harrowing loss of jobs in all sectors of employment, not even by seeking economies in other areas of expenditure.

He said: "It is clear that the pay sector could no longer be cushioned at the expense of other commitments. Some 77 per cent of income was spent on staff costs and no amount was taken of further savings which would have to be made if current pay awards exceeded 6 per cent."

The university had also suffered from a 40 per cent drop in overseas students caused by the increased fees levels. Glasgow may make representations to the UGC on the loss which by 1983 would amount to a 4.5 per cent cut in income.

Sociologists study cuts

Professors and heads of university sociology departments have set up a permanent forum to monitor the effect of spending cuts on the discipline.

At its first meeting, attended by half the country's 70 university sociology professors, they agreed to set up a permanent forum to monitor the effect of spending cuts on the discipline.

The forum will also be asked to provide information for the University Grants Committee's social studies sub-committee. All the UGC's subject sub-committees have been asked to work out a strategy for spending cuts which will not lead to abandonment of the policy of excellence in all disciplines.

The meeting of sociology professors, which follows the long-held example of heads of university departments in most other disciplines, was convened by Professor Ashby Tropp of the University of Surrey.

He emphasized that they have no intention of clashing with the role of the British Sociological Association.

Research council reviews name

The Social Science Research Council is considering changes to its name to reflect its broadening remit to include economics in its research.

Chairman Mr. Michael Aldrich said that the council, which was set up in 1964, had been asked to consider the possibility of a name change to reflect the broadening remit to include economics in its research.

One possibility already under serious consideration is "Economic and Social Research Council".

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Reductions in fee support scheme

The Government is to continue to support a scheme for overseas students to study in the UK, but will reduce the amount of support available to students from developing countries.

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Government promises MPs nothing

by John O'Leary

Not a single new measure is promised in the Government's first response to the Select Committee report on higher education.

The reply, published yesterday, welcomes the report but does not commit the Government to action on any of its 46 recommendations.

As expected, the most sensitive issue, that of a national body for colleges and polytechnics is put off to a later date.

Proposals for the removal of the Inspectorate's responsibility for higher education, the appointment of a minister for continuing education and the introduction of a direct link between funding and student numbers are all rejected outright.

Other key recommendations, such as the abolition of the regional advisory councils and an examination of tenure, are passed on to the local authorities without comment. A number of others, such as the establishment of an Open Polytechnic, the payment of higher grants and salaries to student teachers and qualified staff in shortage subjects and a new relationship between home and overseas students' fees, are all said to be under consideration already.

Despite stringent opposition from the committee, the Government announces its intention of continuing with studies into manpower planning before coming to firm conclusions about the feasibility of introducing a "broader" set of student numbers in different subject areas.

The MPs' emphasis on more openness, particularly in the affairs of the University Grants Committee, also receives short shrift. The re-



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Six per cent staff cut planned by Glasgow

by Ngalo Crequr

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The university had also suffered from a 40 per cent drop in overseas students caused by the increased fees levels. Glasgow may make representations to the UGC on the loss which by 1983 would amount to a 4.5 per cent cut in income.

Professor Williams said that staff cuts could not be made without curtailing or terminating some academic activities while trying to protect or even promote others.

At a press conference in Edinburgh this week the Federation of Student Nationalists called for a campaign to protect Scottish universities against Government attempts to force them to close departments.

It said the axe had already fallen on Edinburgh University's Centre for Tropical Veterinary Medicine and the future of Stirling's politics department and St. Andrews' archaeology department was under threat.

In a letter to universities the University Grants Committee has said that the £30m cut, for 1981-82 and the possible losses arising out of the overseas fees policy added up to a reduction of about 5 or 6 per cent.

Universities should plan "on the basis that the relevant grant allocations for many universities will not be sufficient to enable them to maintain all existing commitments with the consequence that some reduction in the present level of activity will be inescapable even if no new developments are planned."

The UGC may decide to hold some money back in its reserves for selective allocation in the future to help universities to back page

Overseas fees to rise again

University fees for overseas students are to go up by an average of 20 per cent next year, with slightly smaller increases for students in the maintained sector.

This will cause great dismay to students as it is generally believed that the increases would only reflect the rise caused by inflation, now standing at 15.3 per cent.

The decision is an acknowledgment that the present fee levels were too far below the real cost, which has created serious problems for some universities. The levels are still likely only to be recommended minima.

Fees for university arts courses will go up from £2,000 to £2,500, science courses from £3,000 to £3,600, and medical and dental courses from £5,000 to £6,000.

It is understood that the Council of Local Education Authorities will advise members next week of the following fees for overseas students: £2,710 for classroom-based courses (opposed to the current fee of £2,400) and £3,770 for laboratory and workshop-based courses (opposed to the current fee of £3,400).

This means that the fee differential still exists in the university favour but is not as great. Although local authorities are concerned about the difference between the fees they are not expected to pay and the fees they should charge their approach.

SSRC training in new danger

by Charlotte Barry

Another big cut in postgraduate training is being considered by the Social Science Research Council. The new cut, which could lead to the ending of up to 100 more studentships this autumn, may be forced by the SSRC's financial crisis.

The council has calculated that it will be overspent by 500,000 or three per cent of its budget by the end of the financial year.

To counteract this the council will need to raise a "supplementary estimate" from the Treasury to its £16m budget. Otherwise the amount overspent will be deducted from the SSRC's allocation next year and this may force further cuts in its already hard-pressed postgraduate training programme.

In the summer of 1979 the council suffered a sudden disproportionate 8.5 per cent cut in its budget and the burden fell on postgraduate training, which was reduced immediately by 25 per cent.

Since then, the number of new postgraduate studentships has dropped from 1,775 in 1978/79 to 1,030 in 1980/81. A further reduction could cut the 1,018 planned for 1981/82 to below 1,000 for the first time since 1968.

Since 1979 the SSRC has been forced to run the risk of working each year with only £500,000 in uncommitted funds.

The new financial mismanagement has been caused partly by an extra flow of bills from universities and colleges which as a result of cash flow problems have begun to submit their claims on the SSRC research grant budget in good time.

The problems were being discussed at today's meeting of the SSRC. An emergency meeting of the council's postgraduate training board on February 2 will consider the possibility of further cuts.

The chairman of the Social Science Research Council, Sir Geoffrey Allen, has been told to expect to appear before the House of Commons Education Committee on March 18 to explain irregularities in the SSRC's accounts for 1979-80.

Leaked document worries Newcastle Poly

Newcastle Polytechnic authorities are concerned that a study of the practical implications of a further round of severe cost-cutting has been interpreted as a threat of closure.

A leaked paper, which warned that economies beyond £900,000 could lead to withdrawal of validation by the Council for National Academic Awards, was intended only as an illustration of the problems involved, they say.

The city council is expected to help bridge the £1.7m gap between the allocation from the advanced further education pool and next year's estimates of nearly £20m. The education committee will probably announce what aid it can afford when it meets early next month, although it is possible some indications will emerge before then.

According to the study, which was being considered at a special meeting of the polytechnic council this week, a policy of major course closures would have a series of detrimental effects: savings, no significant in-house savings, a sharp loss of student income to the city, and enforced redundancies.

The alternative set out by polytechnic management indicates that cuts of more than £802,000 will be seriously damaging.

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British Academy to award readerships

The British Academy is planning to award a small number of research readerships on the pattern of the Science Research Council's special research fellowships.

Up to five readers will be appointed for three years with the possibility of a fourth year. They may be any of the five fields of study covered by the academy: the ancient world (including archaeology); history; philosophy and religious thought; European and American languages and literature; and Oriental and African languages and literature.

Their universities will be expected to provide them with an academic base, relieve them of all teaching and other routine duties (apart from a maximum of five hours a week), preserve their existing employment rights, and, if possible, appoint other lecturers to take their places.

Mr John Carswell, the secretary of the academy, explained that two considerations had been taken into account in devising the scheme:

"the fearful congestion in the profession created by the Robbins expansion", and the impact of growing financial pressures on universities and consequent heavier teaching loads on opportunities to undertake research.

He expected that the successful candidates would either be lecturers whose promotion opportunities had been blocked by the Robbins bulge or university teachers who were coming to the end of their careers but still had the potential to make important scholarly contributions.

The DES has been sympathetic to the scheme and has added the £75,000 which it will cost to the academy's existing budget. The UGC has also given an assurance that any British Academy readerships will not be counted in assessing the senior: junior ratio in a university.

The academy has sent a letter to all vice-chancellors announcing the new awards and hopes to receive applications from mid-February onwards. It expects to make the first appointments this fall, the start of the next academic year.

Social work report calls for improved research

An immediate plan of action should be launched to meet the pressing need for more research into the personal social services, says a report published this week.

The report, *Research and Practice: a research strategy for the personal social services*, is highly critical of social workers and social work teachers for failing to carry out sufficient research.

Its findings are the result of a working party inquiry set up in 1975 by the Central Council for Education and Training in Social Work and the former Personal Social Services Council.

The report sets out practical recommendations to CCETSW for improving the level of research activity by social workers. These include:

- a new fellowship scheme backed by the appointment of liaison officers and consultants to stimulate and support research by practitioners;
- a system of apprenticeships to "journeymen" who would teach research skills;
- more funding support for research by social workers from the Department of Health and Social Services and the charitable foundation;
- an examination by CCETSW of the constraints on social work

teachers in undertaking research. A review of training for research workers to help them undertake more projects in the personal social services.

• the introduction of a new research register covering all social welfare projects.

The working party was set up as a result of growing concern regarding the present state of research in the field of the personal social services.

This concern was two-fold. First, there was a feeling that greater emphasis should be put on the role of research in improving the quality of practice. "If the personal social services are to be effective, and acceptable, more research must focus upon the analysis of needs and the delivery of service," the report says.

Secondly, there is a need to look at ways of increasing the commitment of practitioners to research. The report states: "Too few of them seem able to appraise research critically or to appreciate its implications for improving practice. Fewer still seem to be able to undertake research themselves."

Research and practice: the report of a working party on research in the personal social services, price £2.50 from CCETSW, Derbyshire House, St Chad's Street, London WC1H 8AD.

Irish lecturer wins case

A Northern Ireland High Court has ruled that the Ulster Polytechnic board of governors acted contrary to natural justice in hearing an appeal against dismissal by Professor John Smith.

Mr Justice Hutton was told that 11 of the governors, who heard the appeal, had earlier been involved in the committee which declared the professor redundant.

He decided that it was contrary to natural justice that they should have sat as judges in their own case.

The court granted Professor Smith a writ of certiorari and ordered that the appeal should be heard over again without the 11 governors involved, but it refused to allow the polytechnic any advice on how to achieve the necessary two-thirds majority for the hearing on the grounds that the polytechnic would have to solve its own problems.

Professor Smith was declared redundant last year following the merger of the polytechnic with the University of Ulster, which was then the faculty of business administration.

Since then he has refused a post which he claimed was not a real departmental post, and has been declared redundant. After he refused the redundancy, he was declared redundant.

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Teacher gap condemned

The Select Committee on Education and the Arts had been weak on teacher training, its chairman said last week.

At the annual general meeting of the National Association of Teachers in Further and Higher Education, Labour MP Mr Christopher Price, chairman of the committee, said:

"The next year, the committee will be looking at the quality of school curriculum."

"One weakness of the select committee was over teacher education," Mr Price said. "We were taking higher education courses generally and we didn't go into CEBT (the advisory committee on the supply and education of teachers) and teacher education as it might have done."

It is a weakness in our report, although teacher education is now a much more important issue."

Mr Price said the committee received many complaints about universities arranging new courses too quickly. "Because they can, for a course in only a third of the time it used to take," he said.

Explaining why the committee did not propose a new body of control over universities, Mr Price said it was a political atmosphere.

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Schools Council push on ethnic studies

by Patricia Santinelli

Teacher training institutions have a major role to play in ensuring that multi-ethnic education in schools becomes a reality, argues a confidential Schools Council report.

The report is based on the first major investigation of local education authorities and school policies and practices on multi-ethnic education since a 1970-73 study by Townsend and Britton for the Department of Education and Science.

The Schools Council's two-year survey assessed the level of provision in schools and defined areas of priorities for action. It followed the 1977 Green Paper *Education in Schools* which said Britain was a multi-cultural and multi-racial

society and that the curriculum should reflect this. The report shows that although there had been significant developments and changes in attitudes since 1973, there was a gap between policies and action, with a limited scale of provision.

It urges concerted and individual action by the DES, L.E.A.s, parents, schools, professional associations, the Schools Council and teacher training institutions. The DES, L.E.A.s and professional associations should develop a framework which encourages greater involvement of minority ethnic groups in the education service as teachers, governors and through contacts with the minority ethnic groups, says the report.

On teacher training it recommends that institutions look at implications of society for teacher education, adopt policies to suit. It wants to see the provision of specialist option courses to train teachers for students who teach in multi-ethnic schools, standing in schools where there are few or no minority ethnic pupils.

The report also calls for the vision of a range of courses for teachers in varying concentrations of ethnic groups, as well as the development of award bearing in aspects of multi-ethnic education. It wants positive action in the recruitment of staff and from minority ethnic groups.

Cambridge thumbs up for NUS

by Paul Flaherty

The normally conservative Cambridge Union debating society has come out overwhelmingly in favour of the normally radical National Union of Students.

The motion, "This house has no confidence in NUS", was lost last week after a furious debate bordering on open warfare and notable for being short on facts and long on invective. The NUS triumphed with 87 noes to 31 ayes.

Before the vote, the union was subjected to a torrent of abuse, variously labelled "impotent", a "hermaphrodite body", "unrepresentative" and "financially incompetent".

At one point Trevor Phillips, former NUS president, rose to his feet and challenged his adversary Conservative MP Nicholas Winter, to come clean on his sneers that NUS supported the IRA. "I want you to strip bare this farrago of lies and make the statement for the record," he demanded.

Mr Winter had likened the NUS to an expensive job creation scheme, before alleging it was well known for giving aid to the IRA, and other terrorist groups.

Under attack, he said: "I do not have words put into my mouth by anybody." For the record, he said, "Money that has come directly from students has one way or another got into the hands of terrorist organisations. That is a fact."

Against repeated interruptions, Mr Winter said the NUS leadership should allow individual unions to spend half its total funds on what we will see how the money is spent," he said.

That cut little ice with the opposition. Mr Phillips started in style, taking great exception to being told by an ex-collared speaker on the other bench, including Cromwell and Chamberlain, that he was out of touch with NUS members.

He ended with a powerful defence of the profoundly democratic nature of NUS. Electing a



First black NUS president Trevor Phillips (top left) last week, Peter Young, FCS chairman (top right) and MP Nicholas Winter (bottom right) in debate with the help of press president Dave Aaronovitch.

black president was a credit to its openness, its structure, its meritocracy, he said. No other national body would have taken such a step, he reminded the house.

Peter Young, president of the Federation of Conservative Students, arrived at the dispatch box with a folder of notes and promptly attacked current NUS president David Aaronovitch as a dangerous Communist. "After all his two cats are called October and Revolution," he said.

The rest of his speech was put into focus by the Cambridge students' Union president, Mr Ian Weight. "His views would be dangerous," he said. "They were not so laughable. Indeed he deserves a

place in the Hitch-Hiker to the Galaxy."

The final nail in the coffin from Mr Aaronovitch. "Mr. Nightmarer is to find myself in a similar call in the Lobby," he said. "That was a EuroCommunist hardy in the pay of the politburo."

Students at Kings College, London, voted by 837-487 to affiliate from NUS in a referendum last week. The vote was almost 50 per cent, and a 10 per cent swing against the

North American News

Carter leaves students a sting in the tail

from Clive Cookson

WASHINGTON

The 1982 federal budget, prepared by Jimmy Carter before handing over the presidency to Ronald Reagan, gives university researchers a big increase in government support. But it leaves students with a less generous final taste of the Carter administration.

A president's annual budget is always scrutinized and altered by Congress, and this year it will also be subject to revision by the new Reagan administration. But it does represent the basis on which the Senate and House of Representatives will appropriate funds for the fiscal year 1982 (running from October, 1981 to September, 1982).

Mr Carter requested a 14.4 per cent increase for basic research, to \$5.9b. According to his science adviser, Frank Press, this will allow a 4.3 per cent real growth above projected inflation. (The Carter administration has been consistently over-optimistic about inflation, and, judging by its final budget, remained so to the end.)

However, student financial aid, the other main source of federal

finance for higher education, is down for only a 5 per cent increase to \$6.4b (1.6 a cut in real terms). In particular the Education Department wants to put a firm lid on the soaring costs of guaranteed student loans (GSL), by reducing the government interest subsidy.

The growth in the science budget is concentrated on the physical sciences and particularly on engineering. Dr Press pointed out, these fields have been relatively deprived of funds in the recent past, while biomedical research has been given lavish increases year after year.

University engineering and computer science departments are given special help, in response to last year's government report on science and engineering education, which showed them to be alarmingly ill-equipped and undermanned.

Altogether \$35m in new funds will be directed towards the improvement of computer science and engineering education. The main initiative is a \$25m programme to buy modern teaching equipment in these fields. Special grants will be made to universities in computer science and engineering are also proposed, to increase postgraduate enrolment

and, in the long run, alleviate faculty shortages.

Another important new programme, which universities will particularly welcome, will give the National Science Foundation \$75m to provide instrumentation and equipment for academic laboratories. Dr Press and the new NSF director, John Slaughter, explained that it grew out of the realization that obsolete and clapped-out facilities were reducing the productivity of many excellent research teams working on government grants. The foundation will make up to 120 awards, one per university, based on each institution's own determination of what it needs most. Any field of science and engineering is eligible.

The Defence department and the National Aeronautics and Space administration will both receive about 22 per cent more money for research and development next year. The former will be continuing its recent effort to support more basic research in universities, in an attempt to heal the deep rifts that opened up between academic and university research during the Vietnam War.

Most of the growth in NASA's

budget will be consumed by the money-guzzling space shuttle, whose first manned flight is scheduled for March 1981. But President Carter has given the agency enough money to start a new planetary mission, the Venus Orbiter Imaging Radar (VOIR), to map the surface of that planet in 1986.

Ongoing Education Secretary Shirley Hufschneider said that if Congress did not accept the budget's proposal to cut back guaranteed student loans, the programme's costs would have risen from \$367m in 1977 to \$3,224m in 1982.

The GSL programme has grown so fast because Congress removed the means test for students to obtain subsidized loans and at the same time made the conditions much more attractive for banks to lend to them. "We are seeking reforms that would take students' other financial resources into account in setting loan limits, eliminate the extra federal subsidy paid to lenders while students are in school, and raise the interest on new loans to parents to prevailing market rates," said Mrs Shirley Hufschneider. The changes would save the Government \$878m in 1982.

Segregated states could lose government funds

The federal Education Department has told the governors of four states that once had separate systems of higher education for blacks and whites that their colleges and universities are still constitutionally segregated.

The governors of Alabama, Delaware, South Carolina and West Virginia were warned that they could lose millions of dollars in federal funds if they do not take more active steps to integrate their academic institutions. Similar letters were expected to go out later this month to the governors of three more states, Kentucky, Missouri and Texas.

The Education Department's office of civil rights investigated the seven states in response to a federal court order last year. The National Association for the Advancement of Coloured People (NAACP) and other civil rights groups have been using the courts for 10 years to try to get the Government to cut off education funds to states whose colleges and universities were still effectively segregated.

The department has found "vestiges of the era when the systems were legally segregated", as assistant education secretary Cynthia

Brown put it. In almost all of the 20 or so states that have been investigated. The vestiges are most striking in the deep south where some state colleges are still 99 per cent black, while the major state universities remain 90 per cent white.

Six states that were found earlier to have segregated systems of higher education (Arkansas, Florida, Georgia, Oklahoma, Pennsylvania and Virginia) are now supposed to be operating integration plans approved by Washington. The Government is embroiled in litigation with another four (Louisiana, Maryland, Mississippi and North Carolina).

But, despite the efforts of the NAACP legal defence fund to force the Government to take a tougher line, no state has ever had any federal funds cut off. Political pressures have stopped the Government using its financial stick to impose integration.

The Reagan Administration will be even less willing than President Carter to force college integration on the south, and civil rights activists fear that the new Education Secretary Dr Terrel Bell will be satisfied with a very mild approach. However, the NAACP lawyers will see to that.

Gold doubloon sold to pay for Yale's new library

Yale University has sold its Brasher Doubloon—one of the world's most romantic and valuable coins—for \$650,000 to help meet the costs of a new library.

University president Bartlett Giamatti said the decision to sell was made "painfully and after much consideration" to "help alleviate the financial stringency which has come to Yale, and to assist in building our new Sterling Memorial Library, now under construction, is costing at least \$15m more than the \$5.2m originally expected."

This 1787 gold doubloon—struck by New York goldsmith Ephraim Brasher before the establishment of the United States mint—was so precious that Yale had to keep it locked away in a secure vault for years. It was neither put on display nor examined by academic experts, because university officials

could not risk its possible theft or damage.

The doubloon had in fact been stolen twice, once in fiction and once in reality. The fictional theft was dreamed up by mystery writer Raymond Chandler in his 1942 novel *The High Window* which was subsequently filmed as *The Brasher Doubloon*.

The story of the real theft was more overpowered security guards at Yale's Sterling Memorial Library, where the doubloon was kept, and made off with it. The 26-gramme coin disappeared for two years until a private detective used his underworld contacts to track it down to a "collector" in Chicago—said to be a mobster—and negotiated its surrender to the university. But no one was ever charged for the crime.

Yale sold the doubloon through a New York coin dealer to a private collector who is understandably remaining anonymous.

Academics at Yale were said about the decision to part with the star of the university's famous numismatic collection (said to comprise 150,000 coins) but there was no public outcry. "It is realized that \$650,000 worth of library books is more use to them than an ounce of metal," said a Yale spokesman.

"We are hoping that we will be able to break even financially over the next year or so," he added. "To achieve that we require a turnover of about a year by then." If the library proves financially successful, employees are expected to be rehired, although Mr Giamatti has no time to employ as yet.

Einstein's work shown as editor's legal row goes on



Einstein: left instructions with trustees.

from our North American editor

WASHINGTON

The entire writings and correspondence of Albert Einstein—15,000 documents—were opened for study at Princeton University library this week. The archive is a complete duplicate of the original papers, which are housed in Princeton's Institute for Advanced Study where Einstein worked until his death in 1955.

The new facility includes a computer index, prepared by Professor John Stachel of Boston University. It provides scholars with their first proper guide through the maze of scientific and non-scientific papers written by Einstein, according to Barbara Haldar, director of the Princeton University Press.

The archive and index were prepared as a by-product of a grand project by Princeton University to publish all of Einstein's correspondence and personal papers, with Dr Stachel as editor. But what Dr Stachel said, because the press is locked in litigation with the trustees of his Einstein estate over the way it is to be done.

There are two trustees, both in their 80s: the economist Otto Nathan, an old friend of Einstein, and Helen Dukas, his secretary from 1927 until his death. In 1971 they signed a contract with Princeton University Press to publish all of Einstein's papers, and in 1976 they agreed to the appointment of Dr Stachel, a physicist and historian of science, as editor. However, as work got under way, the trustees of the National Science Foundation, the two sides fell out over the editorial direction.

By 1979, the trustees had decided to publish the first volume of Einstein's letters and this year in which the university press and the Einstein family associates grow older and die.

of what is expected to be a series of about 20 volumes, all work had stopped, apart from the photocopying of documents for the computer index and the preparation of the computer index. The trustees, who want to get rid of Dr Stachel, and the press, which retains full confidence in him, took their dispute to arbitration.

The arbitrator eventually decided in favour of the publication and Dr Stachel, Mrs Dukas and Dr Nathan are appealing against the ruling.

Meanwhile Professor Stachel remains in Princeton, still on leave from Boston University and dying to get on with his editorial work but unable to do so until the dispute is resolved. If and when that happens, his first task will be to raise money to continue the project. "We will have to reapply to the NSF and other agencies," Dr Stachel said. "We have to start at the beginning again."

An endowment of at least \$1m will be required to pay salary and expenses for the editor and assistants over the 15 or 20 years that the job is expected to take. Sources within the NSF indicate that the foundation, a government agency, will be happy to supply some funds but cannot come up with all that is required.

The impasse is particularly frustrating to historians of science because Dr Stachel had been developing excellent contacts with Einstein's surviving friends and colleagues and shedding new light on his work. Now the editor is forced to sit back and do other things—a second copy of the entire archive was made for Dr Stachel to work on but he will not be allowed access to it until the litigation is settled, while Einstein's elderly associates grow older and die.

Little hope for ED, says Ted

The Senate committee on Labor and Human Resources unanimously approved President Carter's nomination of Terrel (Ted) Bell as education secretary, after a quick and cordial confirmation hearing.

Dr Bell, who has been commissioner of higher education for the state of Utah since 1976, told the committee that Mr Reagan still "intends to carry out" his election pledge to downgrade the Education Department, which Congress created as an independent cabinet-level department in 1979, under pressure from President Carter.

The nominee said he testified in favour of establishing ED then because of the "frustration" he experienced as United States Commissioner of Education within the huge department of Health, Education and Welfare (HEW) from 1976. Dr Bell said he sometimes "felt like the lowest form of animal life" trying to push initiatives through the HEW bureaucracy.

The 59-year-old Mormon told the Senators that he still believes education should be the responsibility of an independent federal agency and should not be folded back into another government department. "One of the responsibilities I will have will be to look for other alternatives to the present structure," he said. Dr Bell has indicated in interviews that he personally would be happy if ED remained a separate entity but was demoted to sub-cabinet rank, like NASA and the National Science Foundation.

Senator Robert Stafford, the new Republican chairman of the Senate labor and human resources committee, commented that he favoured keeping ED's present status for a couple more years, so it "might have its day in court". Mr Stafford's congerial will be very important if the Reagan administration does decide to dismantle or downgrade the department.

Meanwhile college and university associations have been praising Mr Reagan's choice of Dr Bell, both because he is a known quantity who understands the problems and preoccupations of higher education and because he is politically a moderate conservative rather than a right-wing zealot.

Forger fired for helping Uranians

A professor at Northeastern Oklahoma College has been found guilty of selling forged transcripts, credits and diplomas to Iranian students to enable them to continue to attend United States universities and colleges.

Michael Oyedokin was given five-year suspended sentences on each of two charges.

District Judge Sam Fullerton said: "The suspended sentences represent suitable punishment which will serve the interests of justice and protect society." The judge said he hoped the case would have a "deterrent effect" on other academic forgery schemes.

Professor Oyedokin, aged 32 who was social studies teacher for five years at Northeastern Oklahoma College, admitted selling forged transcripts of college credits and college diplomas to 25 Iranian and two Nigerian students so that they could attend colleges.

He worked through an Iranian called Elmi Jolani, Leila Khatami, normally a student at the University of Arkansas, who was killed in a road accident last August.

When looking through Mr Lotker's room for data on next of kin, the authorities found an entire folder's den with blank college transcripts, diplomas, documents and instruments for impressing such with the seals of half a dozen universities in the United States Middle West and Southwest.

The Oklahoma State Bureau of Investigation and the Arkansas authorities are looking for the transcripts and diplomas of other Iranian students throughout the region.

Early evangelists of socialism

Extending the map

Raymond Dawson

by J. F. C. Harrison

The outlines of this labour and socialist history have been provided in the work of G. D. Cole, Henry Pelling and Philip Barrow. Recent biographies of (by Frank Reid) two of the hard-core, fervent studies of (by Margaret Cole, Alan McBride, Willard Wolf and Jeanne and Norman MacKenzie) Ramsey MacDonald by David Marquand, H. M. Hyndman, by G. H. R. Tuzo, William Morris by John G. Wilson, and Sidney and Beatrice Webb by the MacKenzies. To these must be added studies of the various sects, parties and institutions of early socialism, such as *The Socialists* by Eric Foner, *The Socialists* by John G. Wilson, *The Socialists* by John G. Wilson, *The Socialists* by John G. Wilson.

satisfied that some of the leaders were eloquent members of the lower middle class, can we also suppose that this accounts for the fact that hundreds of rank and file activists and intellectuals who gave their support to socialist candidates? There is surely a danger in ascribing a purely movement type of analysis through the intellectual and political leadership of the MacLaurin and the Fargie Claster. Historians of revolution should have related the movement to the development of capitalism and class struggle. The person prefers to follow the cause of socialism through a whole series of individuals most of whom were in some way socially marginal or marginalized.



The practical problem for socialists of all kinds was how to gain mass support from the working class; and the obvious solution was to form an alliance with the trade unions. The Fabians and the ILRP joined to form the Labour Representation Committee. This was a political alliance with a number of trade unions, and was to establish a distinct labour group in Parliament. From the ILRC some 25 candidates stood in 1906 election, when the party first returned to the present-day Labour Party. But the price of this success, argues the ILRP, was high—ultimately the abandonment of socialism. The social democrats were worried that unionism might endanger the interests of their Marxists. The Fabians were long and suspicious of the idea.

[illegible]

Comparative systems of power

Religion as a revolutionary force

The growth of ethnic separatism

The authors' basic contention is that the ethnic problems of Europe have been linked to the fact that the Balkan area has been hampered by developments in the nineteenth and twentieth centuries. Whereas in 1820 more than half the population of Europe belonged to ethnic nations, in 1910 the Balkan area had lost half its territorial population to the rest of Europe (that is, did not constitute a "poly" state) or were scattered among several polities uninterested in their national aspirations. By 1910 there had been reduced to 26 per cent, and today to 10 per cent, the population of the Balkan area. The price of this "achievement" has of course been approximately one-third of the population—over 40 million killed in the European wars of the twentieth century alone. However, the diverse results have been the same: the Balkan area has been reduced to a "poly" state.

has undoubtedly been reduced both in Eastern and Western Europe, even if some activities find themselves within policies which do not exactly appeal to them—for example, the Latvians, Lithuanians and Estonians in the Soviet Union and the Basques in Spain. Other, notably Jews and gypsies, remain persecuted and isolated in the ethnically more homogeneous policies which have emerged.

At the same time, especially since 1945, movement towards greater regional integration in both Eastern and Western Europe has developed. The traditional and historic pressures for greater regional development in many countries in the West and the pressures for greater independence from the Russians in the Soviet bloc. In other words ethnic problems remain, albeit in a different form. Indeed as external threats diminish, they may well increase. In the West, for example, separatist movements have become more prominent in France (protection against the threat from Germany), traditionally the threat from Germany has been the main factor in the French state, has disappeared. In the East, both the Soviet Union (which will have a majority of non-Russians by the turn of the century) and Yugoslavia (where the principle Serbian-Croat-Slovene names have little in common, could be easily nationalized in the

Jean Blondel

William Hale

Dr Hale is lecturer in the politics of the Middle East at the University of Durham.

Beneficient rule

Approaches to Democracy is much better described by its subtitle, "philosophy of government at the close of the twentieth century," for it is not so much about democracy as about the absence of anything its author is proud to recognize as political philosophy. *modus operandi* is to pass in review a number of recent political theorists and political scientists, and to complain that they have succumbed to relatively old-fashioned ideas, or Freud or something or other. As a result, it makes for wearing reading, and where one hasn't read the author under attack, it is often difficult to see what's going on; for the matter of that, it's often little easier where the author is questioning a more familiar. The underlying theme, though, is clear—it is with violence and its control in a democracy. Professor Staniewicz deplores people who confuse the bullet and the sword, not whether it is Professor Rawls suggesting that violence may be seen as "a form of justice" or Ted Honderich arguing that gross inequalities in welfare may legitimately be redressed by violent methods. Much of what he has to say about violence and the rule of law is entirely correct, but at the point, but the grinding tone of the book deters the reader from searching for the useful pages, and I suspect that nobody will make very much of *Approaches to Democracy* who is not already well-versed in Professor Staniewicz's earlier works too.

Alan Ryan

Alan Ryan is a fellow of New College, Oxford.

Unesco 'Insights'

Forthcoming:
Violence and Its Causes

Violence and Its Causes

BOOKS

Victorian vignettes

The Heyday of Natural History
by Lynn Barber
Jonathan Cape, £9.50
ISBN 0 224 01443 X

It was a sign of the shape of things to come when, in 1833, William Whewell, spinning the terms "naturalist" or "naturalist", coined "scientist" for those who practiced science. By 1859 Huxley was able to dismiss the class of naturalists for including "a far lower order of men than chemist, physicist and mathematician". Yet, as Lynn Barber shows in her well researched and documented, elegantly written and beautifully illustrated book, natural history had extraordinary popular appeal for the early and mid-Victorians.

Following Mallet and more recent interpretations, historians of science believe that the pre-Darwinian style of Anglo-American science was characterized by individualism, a claimed commitment to linearity, natural theology and teleology—all explicit traits of the Victorian natural history movement which seem to have satisfied an essentially insatiable need for "rationalizing recreation". It was this cultural enthusiasm for the curiosities and wonders of Paley's designed Nature that provided, among other things, the catalysts and patrons of science who supported the annual provincial theatre of science, the British Association for the Advancement of Science. As it turned out, however, the latter was used to advance the aims and aspirations of Whewell's and Huxley's scientists, at the expense of natural history's mass appeal. For with the growing character of naturalists in museums and marine biology stations, the

institutionalization of the "science professionals" in universities, colleges and schools after 1870, and with the radical changes in the style of natural science promoted by Lyell's geology and Darwin's evolution, there was an inevitable divorce between recreational and professionalizing natural history and academic biology. Nevertheless, the "science amateurs" in their field clubs and societies have continued to play a valuable supporting role in the development of the environmental sciences into the twentieth century.

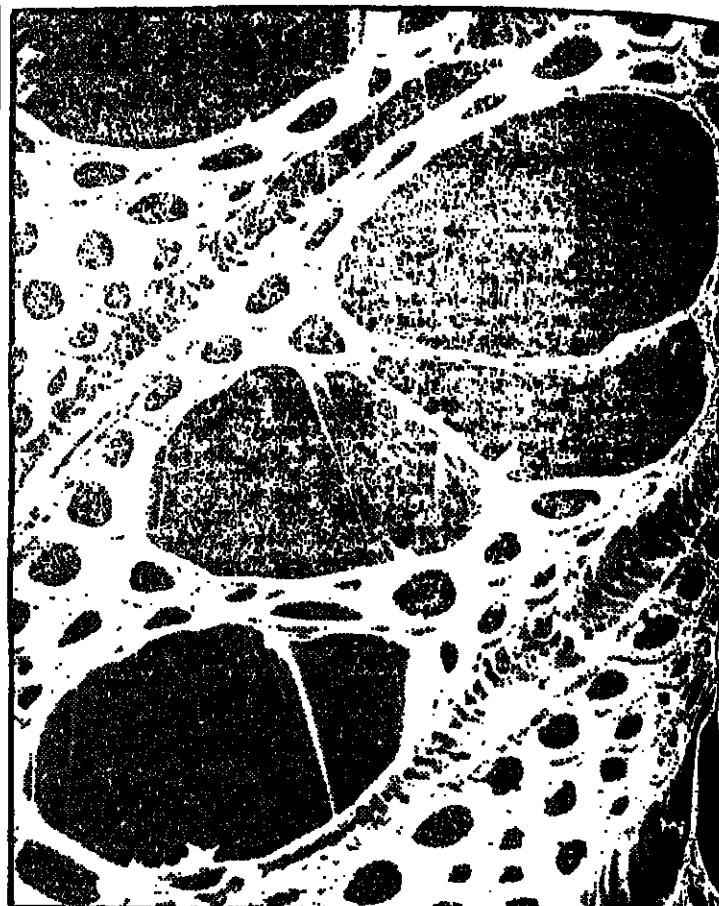
Although Miss Barber's witty and thoughtfully entertaining study is only indirectly concerned with these changes of mood, tempo and direction (which are simply described as "professionalization"), she provides historians with much confirmatory evidence. The book is structured around the classificatory slots of social and scientific background, popular expositions of natural history, and examples of orthodoxy and dissent. Although delightfully composed biographical vignettes form the bulk of the narrative, the book shows a firm grasp of the secondary literature and a close acquaintance with the popular sources discussed. Miss Barber is not content merely to summarize the careers and writings of Linnaeus, Richard Owen, Hugh Miller, Charles Waterton, Philip Miller, Frank Buckland, or the medieval writings of Victorian industrialists. By the use of deft quotation, shrewd analysis and judgment concerning their presumptions, aspirations and follies, by bringing American naturalists such as Audubon and Peale into the account, and by placing the whole survey within the context of changing beliefs concerning man's place

in nature, the book becomes a valuable complement to D. E. Allen's more sociological study of *The Naturalist in Britain: a social history* (Allen Lane, 1976).

Some minor emphases of interpretation will be challenged by professional biologists. For example, biological innovation seems to have been stagnant only between 1800 and 1859 (page 15), if one has the evolutionary story narrowly in mind. Arguably, however, the unification of biology engendered by the cell theory was a more important innovation than evolution. Similarly, although it is true that natural theology was inimical to scientific thought in most popular naturalists, it is generally agreed to have been a great stimulus to Darwin himself. Personally, I should argue more strongly that the "aquarium movement" was an extremely important contribution from popular naturalism to applied and research science—not only for plant distribution and fisheries (as Miss Barber properly suggests) but also for an understanding of photosynthesis and the mechanism of river pollution and its alleviation. One could also cavil that the illustrations (most of which are not referred to in the text) deserve explanatory captions and identifications to sources other than credits to picture agencies. Nevertheless, author, designer, publisher and printer are to be congratulated. Their book richly deserves both popular and scholarly success.

William H. Brock

William H. Brock is reader in the history of science and director of the Victorian Studies Centre at the University of Leicester.



Scanning electron micrograph of water-carrying vessels of *Nothofagus solandri* var. *solandri* (tanyose face, approximately magnified 10 times). Taken from *Three-Dimensional Structure of Wood: a structural approach*, by B. G. Butterfield and B. A. Meylan, at the 2nd edition of which has been published by Chapman & Hall at £15.00. The book is intended as a teaching aid for botany and forestry students in universities, forestry institutes and technical colleges, the book contains current theories on wood structure and function.

Getting to grips with physicochemical principles

Biophysical Chemistry
by Charles R. Cantor and Paul R. Schimmel
Part I: The Conformation of Biological Macromolecules
Freeman, £17.70 and £19.20
ISBN 0 7167 1042 0 and 1188

Part II: Techniques for the Study of Biological Structure and Function
Freeman, £20.70 and £16.60
ISBN 0 7167 1189 3 and 1190 7

Part III: The Behavior of Biological Macromolecules
Freeman, £22.40 and £11.90
ISBN 0 7167 1191 5 and 1192 3

We have moved a long way from the time when vitalists refused to admit that the laws of physics and chemistry could elucidate the peculiar characteristics of living organisms. Biophysical chemistry is now a well-established field, and biological material—with its inherent variability, instability and complexity—is analysed as rigorously as it is in the case of simple organic chemistry. As more and more of our research grants are swallowed up in expensive pieces of equipment, biologists must get to grips with the physicochemical principles they use. Otherwise they will remain dependent on experts who, despite their superior knowledge of physics or chemistry, may have little understanding of

biological material or its place in living organisms. Countless biologists used centrifugation to isolate subcellular organelles before the 1950s, but only de Duve's group, through their rigorous understanding of the theory of differential centrifugation, discovered the lysosome.

Despite this, biophysical chemistry is still notoriously difficult to teach to students interested primarily in biology. Even at research level they tend to shy away from mathematical formulae, unless its biological relevance is constantly stressed. Perhaps this is why comparatively few textbooks on biophysical chemistry have appeared since the first and classic volume by Edsall and Wyman in 1958; this was closely followed by Tanford's *Physical Chemistry of Macromolecules* in 1961, and now again the Americans have come through with a three-part treatise on biophysical chemistry by Cantor and Schimmel. Unfortunately, these books will appeal more to the physicist than the biological scientist. They grew out of an MIT undergraduate programme in physical chemistry, and the approach is strongly mathematical. Despite separate boxed notes on wave functions as vectors and an appendix on elementary quantum mechanics, it is unlikely that the reader will be able to follow the concepts in any depth to the main

text. Nevertheless, the descriptive sections, particularly in part I and the early chapters of part III, could be exceedingly valuable to anyone interested in describing the molecules of living organisms in molecular terms. However, they will need some previous acquaintance with macromolecules, as the first year or second-year undergraduate biochemistry course.

Part I is intended to introduce the subject by describing macromolecular structure and the forces which stabilize it. It provides an excellent and up-to-date account (well illustrated by infrared spectra) of present knowledge on protein and nucleic acid structure. It moves beyond conventional descriptions of the primary-to-quaternary hierarchy of structure, for example, helical quaternary structure (as in tobacco mosaic virus), kinds of DNA tertiary structure, and methods of comparing tertiary structure in proteins. The non-covalent forces stabilizing the macromolecular structure are described in considerable depth, including a very detailed account of Ramachandran plots and a discussion of hydrophobic interactions; a discussion of entropic and enthalpic contributions to free energy. However, there is excessive emphasis on structure, and the book is too long. Part II, the area of light and polymer chemistry. Neither of these classes of molecule are given much space, and it is surely unfortunate that the book is so long. Part III, the area of kinetics and thermodynamics, is illustrated by a number of examples, and is more accessible than the previous parts. The authors' intention to relate behaviour to principles and techniques is realized only towards the end of the book. In the very excellent chapter on protein folding and DNA replication, the authors' intention to relate behaviour to principles and techniques is realized only towards the end of the book. In the very excellent chapter on protein folding and DNA replication, the authors' intention to relate behaviour to principles and techniques is realized only towards the end of the book.

sections on electron and neutron diffraction.

Unfortunately, the authors give very little indication of the biological relevance of all the theory. For instance, the great majority of protein chemists determine molecular weight not by ultracentrifugation but by SDS polyacrylamide gel electrophoresis, where irregular detergent-binding behaviour may make a nonsense of the elegant equations. This fact is not mentioned, nor is there any hint as to how often, for example, the mathematical analysis of the shape of gel filtration peaks has yielded biologically useful information. It is particularly unfortunate that such a well-presented account should fall here.

Part III is intended to relate the principles and techniques discussed in earlier volumes to the behaviour of macromolecules and begins with three chapters on thermodynamics. Although the treatment is highly mathematical, these chapters have much to offer the biologist. They cover the familiar themes of ligand binding equilibria, kinetics (mainly of enzymes), and allosteric regulation, but with a refreshingly new approach (though it would have been kind to relate V_s and K_s to other people's K_m and V_m).

There are sections relevant to the study of membranes, and a chapter on the kinetics of large molecules (polymer solutions, large ligands), rapid reaction rates, and a review of ribonuclease reaction mechanism in the light of both kinetic and X-ray data. The following chapters, with their statistical approach to polymer conformation, are more for the physicist than the biologist. The authors' intention to relate behaviour to principles and techniques is realized only towards the end of the book. In the very excellent chapter on protein folding and DNA replication, the authors' intention to relate behaviour to principles and techniques is realized only towards the end of the book.

to teach the theory behind established techniques for determining protein and nucleic acid structure. Their text is clear and the excellent chapter summaries and well-chosen problems (with answers and explanatory comments) even students less confident in the physical sciences can sufficiently determine the chemical behaviour of molecules. They should be particularly useful in parts I and II.

Sadly, however, this book has failed in what should surely be a major concern to all biologists: to provide a clear and concise introduction to the theory of nuclear physics. The book is too long, and the authors have not been able to provide a clear and concise introduction to the theory of nuclear physics. The book is too long, and the authors have not been able to provide a clear and concise introduction to the theory of nuclear physics.

The final chapter on membranes, equilibrium, and biophysics is disappointingly short. It describes the work on micelles and membranes, but it is not clear how this work is related to the study of membranes. The authors' intention to relate behaviour to principles and techniques is realized only towards the end of the book.

Anna J. Purth is lecturer in physics at the Queen's University.

BOOKS

The case against Galileo

Galileo
by Stillman Drake
Oxford University Press, £4.50 and 95 pence
ISBN 0 19 287 527 2 and 526 4

The focus of this brief biography is Galileo's trial and condemnation by the Inquisition, an event which is explained as having originated in the hostility to Galileo not of the Church but of contemporary philosophers. The events surrounding Galileo's trial have been and still are open to widely differing interpretations and as a result to conflicting views of his personality and intentions. The solution to this problem is, in Drake's view, to be found by searching elsewhere in the abundant historical sources and so to establish independently Galileo's attitudes and characteristics by his earlier words and actions.

This is a perfectly reasonable proposal, but it is hardly new: its ultimate value lies in the light it throws on the trial, which is inevitably doubtful. There is an implication that this approach resolves the difficulties met by earlier scholars, but this hardly does justice to the efforts of earlier biographers. The book is a good one, which has already examined the trial within the context of Galileo's scientific and philosophical development as a whole. In any case the results of the previous attempts to provide such a synthesis have led to widely differing views of Galileo's scientific personality, as the works of Geymonat, Koyré and Koestler reveal.

The study of the abundant historical sources do not after all help us to arrive at a view that allows us to unify Galileo's various scientific methods and arguments, a synthesis which is further complicated by the fact that in this case, he was not dealing with scientists or philosophers, but with the Church.

We know that Galileo used observation in radically new ways, which combined an instrumental and mathematical approach to nature, in his study of motion. The great advances in this approach date from the decade prior to his use of the telescope in 1610. But if his earlier work allowed him to grasp the potential of the telescope as a new physical instrument, it did not equip him to provide an explanation of the way it worked. As Galileo lacked the theory of optics he needed, how could his use of the telescope be justified?

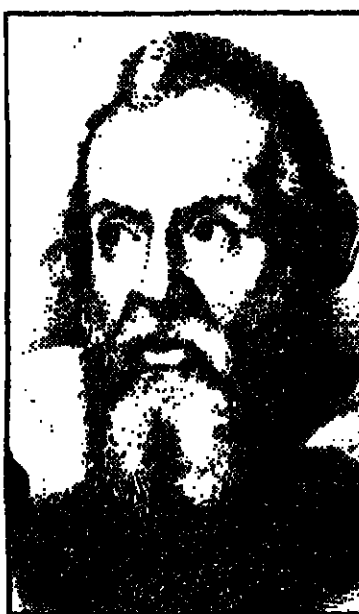
Drake regards Galileo's activity here to have been unjustifiable phil-

osophically—though this in his view is the situation of all science. Nevertheless Drake seeks to justify Galileo's use of the telescope by suggesting he was using observation whereas his opponents were not. This refusal by Drake to face the difficulty that Galileo did not simply "use observation" looks weak. In any case it still leaves us with a problem not mentioned by Drake: Galileo claims that it was his "deep study of the theory of refraction" that guided him in the construction of his first telescope.

Drake's major thesis is that Galileo's conflict with the Church arose from a difference of view concerning the nature of science. He regarded the Church as having adopted an Aristotelian standard of truth, incontrovertible evidence, whereas Galileo was suggesting a new standard of truth—that truth was simply that which was supported by the preponderance of evidence. It was in Drake's opinion because of his concern for the Church that he set out to prevent it from committing the fatal error of condemning the heliocentric theory on the basis of a mistaken view of science.

The dispute did not hinge on the reliability of the evidence revealed by the telescope, as the Jesuit astronomers were asked to examine the matter. Judged Galileo's claims regarding such things as the moons of Jupiter and the phases of Venus to be well founded. Faced with the task of justifying his new science and his method Galileo could not merely claim he was using observation whereas his opponents were not. According to Drake there was no prospect of providing a philosophical justification anyway. Drake, however, does not make this implication. The Church did not seem to be opposed to Galileo's new science, but rather to his philosophical position. The Church did not seem to be opposed to Galileo's new science, but rather to his philosophical position. The Church did not seem to be opposed to Galileo's new science, but rather to his philosophical position.

In fact the Church recognized that the Copernican theory was in decline, whereas the theory of the Copernican theory had increased. The action of the Inquisition in declaring Copernicus *De Revolutionibus* to be in need of correction 70 years after its publication is a clear demonstration of this. Galileo, like many others, including several Jesuits, saw the Copernican theory as clearly the best candidate



Galileo

for the accolade "true" in 1616. If Galileo was not seeking absolute truth, this might have satisfied him. Obviously it did not.

What Drake does not make clear is whether Galileo thought the preponderance of evidence for a theory made it probably true or absolutely true? The philosophical debate hinged on this very question. The "angelic doctrine" of Urban VIII was that although a given set of "facts" seemed to favour a particular theory, there always existed other possible theories capable of accounting for those facts. This followed from the consequence that the possibility of a solution is stable if a small change in the equation produces only a small change in the solution. The two approaches, numerical and qualitative, give complementary insights into many situations. It is useful to be able to compute numerically the future motion of a planetary system; it is also reassuring to know that the system is stable so that a small perturbation to the system, such as a meteorite, will not have a catastrophic effect.

The two opening chapters of this book discuss the stability of solutions; the first chapter gives an account of the classical theory of Lyapunov functions which first appeared in the early 1900s; the second deals with more recent developments, mostly those of the 1960s, in stability theory such as LaSalle's invariance principle and the use of differential inequalities or of more than one Lyapunov-type function.

Ron Naylor

Ron Naylor is head of the division of philosophy at Thames Polytechnic.

Differing approaches to nuclear physics

The Physics of Nuclear Reactions
by W. M. Gibson
Pergamon, £17.50 and £6.00
ISBN 0 08 0320 78 4 and 77 6
Introduction to Nuclear Reactions
by G. R. Satchler
Macmillan, £23.00
ISBN 0 333 25907 6

Although both these books have virtually identical titles, and in their prefaces both authors claim that they are aimed primarily at the undergraduate student, a cursory flip through the pages of the two books would leave the average undergraduate wondering if they were in any way related at all. The reason lies clearly in the differing backgrounds of the two authors.

Dr Gibson is not a professional nuclear physicist, having spent the bulk of his research life in the field of particle physics. He is, however, a very experienced teacher at the undergraduate level. Dr Satchler has been a major contributor to the theory of nuclear reactions over the past 20 years and is still extremely active in the field, but he has had to teach an undergraduate course. The result is two entirely different books.

The Physics of Nuclear Reactions is to a nuclear physicist somewhat eccentric in its choice of material, and says little or nothing about the problems of nuclear reactions which have taxed the minds of nuclear physicists in the past five to ten years; nor does it make any mention of some of the well established techniques that are used but which came into prominence

after the late 1960s. It is perhaps not too surprising that little is said about heavy ion reactions, but the complete absence in any book on nuclear reactions of the distorted wave Born approximation must be regarded as extraordinary, as it has been the dominant theoretical tool for the analysis of experimental results for more than ten years. Indeed, even in the first two chapters Dr Gibson shows his lack of recent contact with the field he has been discussing, in such elementary matters as the nature of particle accelerators, particularly the electrostatic accelerator. The second generation of these, with terminal voltages in the region of 13 MV and above, are not mentioned, and the idea of using electron beams for stabilization has in fact never been put into practice, due to the difficulties it produces. Surprisingly, in a modern textbook it is surprising to find a discussion of the betatron, a machine which has had its day as far as nuclear structure physics is concerned.

However, when we come to matters such as an elementary treatment of resonance, the distorted wave Born approximation, the Breit-Wigner formula, it is admirable in its clarity and in the didactic skill with which it is presented. Indeed Satchler's standard reference, however, is a two-volume work by A. Messiah—scarcely a reference work for an undergraduate student, being probably the most comprehensive book on non-relativistic quantum mechanics currently in existence.

Students in general get very upset when presented with mathematical

formulae which are quite beyond their comprehension, and I am sorry to say this occurs time and again in Satchler's book. This is a substantial part of his book is seriously concerned with presenting physical pictures of some of the difficult scattering processes which take place, and endeavouring to illuminate them by these pictures. The relatively simple results which come out from their complex pieces of mathematical analysis.

He brings out clearly, for example, the equivalence of the sharp cut-off model and the diffraction model, and the difference between the two. He also brings out the difference between the two models, and the difference between the two models, and the difference between the two models.

It takes a considerable degree of sophistication to accept mathematics for which one only has a general feel at best, and to pay attention carefully to the physical descriptions given. And yet this is what is clearly required to make full and proper use of Dr Satchler's book. He does state, however, that although aimed at the undergraduate student, others may find it useful. For example, the book is an admirable guide to the established nuclear physicist refreshing his memory in areas in which he is not currently working himself. The book is in fact divided into only four chapters. An excellent introductory chapter provides the background information, and the first third of the second chapter an introduction to nuclear reactions—it is at this point that the mathematical difficulties start to enter seriously, although a persistent student might well carry on to the end of this

Differential equations

Ordinary Differential Equations: stability and periodic solutions
by N. Rouche and J. Mawhin
Pitman, £22.00
ISBN 0 273 08419 4

Satellites orbit the Earth, violin strings vibrate, animal populations fluctuate in size. We are everywhere surrounded by things which vary with time but which tend to settle down into definite, often time-periodic, patterns. Descriptions or explanations of such phenomena can be made precise if they can be expressed in a suitable mathematical language and the language most frequently used is that of differential equations.

An obvious programme to follow in investigating time-varying phenomena is to model the given situation using a differential equation, solve the equation and then use the solution to make predictions about the original situation. Often, in practice, the above procedure cannot be fully implemented; many simple physical situations give rise to differential equations which look simple but which cannot be solved explicitly. For example, it is easy to find the differential equations describing the motion of n bodies subject to mutual gravitational attraction; the equations, however, can be solved only when n equals two.

There are two main methods for tackling a differential equation which defies explicit solution. The equation can be solved numerically or theorems can be proved about the existence, uniqueness and qualitative properties of solutions. A solution is stable if a small change in the equation produces only a small change in the solution. The two approaches, numerical and qualitative, give complementary insights into many situations. It is useful to be able to compute numerically the future motion of a planetary system; it is also reassuring to know that the system is stable so that a small perturbation to the system, such as a meteorite, will not have a catastrophic effect.

The two opening chapters of this book discuss the stability of solutions; the first chapter gives an account of the classical theory of Lyapunov functions which first appeared in the early 1900s; the second deals with more recent developments, mostly those of the 1960s, in stability theory such as LaSalle's invariance principle and the use of differential inequalities or of more than one Lyapunov-type function.

Ron Naylor

Ron Naylor is head of the division of philosophy at Thames Polytechnic.

The last three chapters are primarily concerned with showing how the existence of periodic solutions can be established by the use of functional analysis. In chapter three the problem of finding periodic solutions is shown to be equivalent to that of solving an operator equation in a suitable function space. Finally, existence theorems are proved for almost linear systems of equations by using the contraction principle and for more strongly nonlinear systems by using degree theory and Galerkin approximations.

The original French version of this book appeared in 1973. In this translated edition it seems that the historical notes and references at the end of each chapter and the final bibliography have been brought up to date but the main part of the text remains more or less unchanged. None of the material in the book is at all outdated but I think that, if the book were to be rewritten today, it should contain a discussion of Hopf bifurcation theory which helps establish the existence and uniqueness of periodic solutions by making clear the relations between certain linear and nonlinear problems. Although parts of this theory were probably known to Poincaré at the end of last century and the classical paper on the theory was written by Poincaré in 1942, it has been only in the past ten years that the theory has become generally appreciated and widely used; it is now one of the most important tools we possess for the investigation of periodic solutions.

The authors are to be congratulated on a lucid exposition combined with a thorough pedagogical approach; detailed proofs of theorems are given throughout; and there are exercises at the end of each chapter. The techniques discussed—such as Lyapunov functions, degree theory and Galerkin approximations—have diverse applications to both ordinary and partial differential equations and should be part of the armory of any worker in these fields. Nevertheless the authors have been selective in their choice of topics from the massive research literature which exists both on stability theory and on the applications of functional analysis to differential equations. Thus they have produced a very instructive book which is easily comprehensible rather than massively comprehensive.

Kenneth Brown

Kenneth Brown is lecturer in mathematics at Heriot-Watt University.

Reading Matters

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Cambridge University Press

TANZANIA

[illegible]

Applications should be sent to the Academic Officer, University of Dar es Salaam, Box 3509, Dar es Salaam, Tanzania, to arrive on or before February 24, 1981. The applicant must be a resident in the United Kingdom and should send one Inter-University Council application form to: 91 Tottenham Court Road, London W1P 0DT. Further information is available from the British Council, 11, St. James's Place, London W1A 1AB.

TANZANIA
UNIVERSITY OF
AR ER SALAAM
Applications are invited for
following posts in the
INSTITUTE OF KISWAHILI
RESEARCH
RESEARCH PROFESSOR
ASSOCIATE PROFESSOR
LECTURER in KISWAHILI
LITERATURE
Candidates should have a
degree in Linguistics and re-

THE RESEARCH PROJECTS
OF SENIOR RESEARCH
FELLOW IN LEXICO-
GRAMMARS should hold a
degree equivalent in general
linguistics or in lexicog-
raphy (Kiswahili) semantics
(Kiswahili) and should
also will be an advantage
competence in Kiswahili
writing.

TWO ASSOCIATE
RESEARCH PROPOSITORS/
RESEARCH FELLOWS
should hold a Ph.D.
degree and should have
experience in lexicog-
raphy (Kiswahili) and the
ability to perform in Kiswahili
writing.

SENIOR RESEARCH
FELLOW AND SENIOR
RESEARCH FELLOW
should hold a Ph.D.
degree in LEXICO-
GRAMMARS.

or equivalent, practical experience in works of historical and ethnographic nature in various languages other than Russian is essential. Applicants must have a literature degree and have at least three research publications in the field of the history of Theatre and Drama, and the aesthetics of the Theatre. Foreigners will be added advantage. Approval of the Leningrad University Council is necessary. Salary: 100 rubles monthly, plus a supplementary allowance—subsidy for housing, food, and other necessities. Annual salary 1,200 rubles. Excellent conditions.

publications (two copies), a curriculum vitae showing the following references, be sent to the Chief Officer, University of Salem, P. O. Box 200, Salem, Oregon 97331. Applicants in the U.S. should also send copies to: Inter-University Council for the Americas, 1000 Connecticut Avenue, N.W., Washington, D.C. 20036. London with four details are available at other address.

OXFORD
THE UNIVERSITY
GERALD AVERAY
INSTITUTE OF RESEARCH
IN ANTHROPOLOGY
NEAR EASTERN
ARCHAEOLOGY
Board of Management of

Western Archaeological
 Institute, April 1971
 to carry out research
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 island (from Morocco to
 Sicily). The period of
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 Further particulars may be
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 Square, Oxford OX1 2JL, by
 application to the Registrar
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 naming two referees,
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 and dated, by 15th
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Universities continued

JOHANNESBURG

UNIVERSITY OF THE
WITWATERSRAND
DEPARTMENT OF
PHYSICS

Applications are invited from qualified persons for the post of Lecturer in Physics. The successful candidate will be required to teach and supervise the work of students in the Department of Physics. The salary scale is R12,000 to R18,000 per annum. Applications should be sent to the Director of Staff, University of the Witwatersrand, Johannesburg, 2000.

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ULSTER POLYTECHNIC
Faculty of EducationLECTURER II/
SENIOR LECTURER
PHYSICAL EDUCATION
AND SPORTS STUDIES

Salary Scale: Senior Lecturer, £8,952 to £10,539/£11,295
Lecturer II, £6,012 to £9,702

To teach Exercise Physiology in undergraduate courses and contribute to the programme of practical activities.

The Polytechnic is a direct grant institution with an independent Board of Governors. It opened in 1974, and has a student population of some 7,600. It has extensive new purpose-built accommodation, including 830 residential places on the 114-acre campus overlooking the sea at Jordanstown, a pleasant and quiet residential area. There is a scheme of assistance with removal.

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SHEFFIELD CITY POLYTECHNIC

HEAD OF THE DEPARTMENT OF
COMMUNICATION ARTS (GRADE VI)

The Department is responsible for teaching film-making, photography, video/sound and performance arts mostly in the BA Fine Art and also for the Foundation course in Art and Design. Higher Technicians are under development. The Head must have proven ability and reputation in one of the disciplines for which the Department is responsible.

HEAD OF THE DEPARTMENT OF PAINTING
AND PRINTMAKING (GRADE VI)

Applications are invited for the important post from those able to provide leadership in this well established Department.
Salary: £13,995 - £18,432

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OXFORD

POLYTECHNIC
DEPARTMENT OF
MATHEMATICS, PHYSICS,
AND COMPUTINGSENIOR LECTURER IN
COMPUTING

The Department offers a range of courses in Computing Science, and the successful candidate will be required to teach and supervise the work of students in the Department of Computing Science.

The salary scale is £8,952 to £10,539/£11,295. Applications should be sent to the Director of Staff, University of the Witwatersrand, Johannesburg, 2000.

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LONDON
THE UNIVERSITY
IMPERIAL COLLEGE OF
SCIENCE AND TECHNOLOGYRESEARCH ASSISTANT
IN THE
MICROPROCESSOR UNIT

The College has established a research group in the microprocessor unit. The group is currently seeking a research assistant to work on the development of a microprocessor-based system for the control of a robot arm.

The research assistant will be responsible for the design and development of a microprocessor-based system for the control of a robot arm. The successful candidate will be required to have a degree in a relevant discipline and experience in the use of microprocessors.

Further particulars and application forms (which must be returned by February 9, 1981) may be obtained by telephoning Whitehead (0231) 65151, extension 2243, or by writing to: The Establishment Officer, Ulster Polytechnic, Shure Road, Newtownabbey, co Antrim BT37 9QB.

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Research Posts continued

EXPERIENCED
RESEARCH WORKER

NATIONAL INSTITUTE FOR SOCIAL WORK

The Working Party on the Role and Tasks of Social Workers has been set up to examine the role and tasks of social workers in the light of the findings of the Working Party on the Role and Tasks of Social Workers. The Working Party is currently seeking a research worker to assist in the study.

The research worker will be responsible for the design and development of a research project. The successful candidate will be required to have a degree in a relevant discipline and experience in the use of research methods.

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Colleges of Higher Education

Hull College of Higher Education

Opportunities exist for appointments to the following posts:

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PL-History of Art,
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Faculty of Business

PL or L2/SL-European
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computing/Business
Information Systems
PL or L2/SL-Management of
Human Resources

Faculty of Humanities, Education and
Social Studies

L2/SL-Social work and
Social Administration

Faculty of Science, Engineering and
Maritime Studies

PL-Fisheries studies
L2/SL-Fishing Technology
L2/SL-Marine Engineering
Research Assistant
L1-Energy Conservation in
Green-houses

Applications are invited from suitably qualified and experienced persons

Principal Lecturer	£10,509 - £13,245	Lecturer 2	£6,012 - £9,702
Senior Lecturer	£8,952 - £11,295	Lecturer 1	£4,683 - £8,055

Further details and application forms may be obtained from

The Personnel Office
Hull College of Higher Education
Queens Gardens, Hull HU1 3DH
Telephone (0482) 224121, Ext 238/282

Colleges of Higher Education

GWENT COLLEGE OF HIGHER EDUCATION

LECTURER 2

Applications are invited for the post of Lecturer Grade 2 in the Foundation Course at this College.
Salary Scale: £6,012 to £9,702
It is expected that the person appointed will commence duties at the beginning of the Summer Term 1981 and will be responsible for a Design Discipline and Photography.

Further details and application forms are available from:
David Dix (EAO)
Chief of the College Governors,
Gwent College of Higher Education,
College Crescent, Caerleon, Newport, Gwent NP6 1XJ
Telephone: (0693) 421122

WEST YORKSHIRE

LEWIS COLLEGE

RESEARCH ASSISTANT

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Courses continued

Diploma in Management Studies
(Education)

Applicants are invited from those holding positions of responsibility in education for entry to this two-year diploma programme, commencing September 1981 at ARMC, a new postgraduate management centre at Stafford, East London. Further details may be obtained from the Admissions Tutor, ARMC, Nigel Bennett, at Anglian Regional Management Centre, Quince House, High Street, Stafford, London E15 2SR. Tel. 01-593 7752.

ARMC Anglian Regional
Management
Centre

NORTH EAST LONDON POLYTECHNIC - ESSEX COUNTY COUNCIL

ESSEX
THE UNIVERSITY OF
SOUTHAMPTON
CHAMPAIGN STUDIES

The Department offers a M.A. in Champaign Studies to enable students with an undergraduate degree in a relevant subject to gain a deeper understanding of the region. The programme is a two-year course, with the first year spent in the UK and the second year in the USA. The programme is designed to provide students with a comprehensive understanding of the region's history, culture, and politics.

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5. AMERICAN HISTORYQUEENSLAND INSTITUTE OF TECHNOLOGY
BRISBANE, AUSTRALIA

DEPUTY DIRECTOR

The Deputy Director will be responsible to the Director for the academic aspects of the Institute's administration and will act in the capacity of Principal Officer during the Director's absence.

Essential qualifications for appointment are possession of a higher degree, demonstrated experience and ability in academic administration, substantial contribution to curriculum development at tertiary education level and a wide knowledge of modern trends in higher education.

The Institute was established in 1965 on a site close to the central business district of Brisbane. As a multi-disciplinary institution, it offers a range of courses up to Masters degree level, within the Schools of Applied Science, Built Environment, Business Studies, Engineering, Health Science and Law. In 1980, the Institute has a total enrolment of 7,000 students.

The position attracts a basic salary of \$438,800 per annum (soon to be increased by 4%) plus appropriate allowances. Applications and enquiries will be treated in strict confidence. Enquiries for further information should be directed to Mr. B. G. Waters, Registrar, at the address shown below. Applications, which should include a comprehensive curriculum vitae and the names and addresses of three (3) referees, should be addressed to:-

Mr. B. G. Waters,
Registrar,
Queensland Institute of Technology,
G.P.O. Box 2434,
BRISBANE, 4002
Australia

By Friday, February 27, 1981.

Overseas

CANADA

DEPARTMENT OF GERMANIC
LANGUAGES

UNIVERSITY OF ALBERTA

Edmonton, Canada T6E 2E6

Invites inquiries regarding

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Invites inquiries regarding

positions in the Department

THE NEW SOUTH WALES
INSTITUTE OF TECHNOLOGY
SYDNEY, AUSTRALIA

SCHOOL OF HUMANITIES AND SOCIAL SCIENCES

The New South Wales Institute of Technology is a public institution providing a wide range of courses at postgraduate level in the city of Sydney.

The School of Humanities and Social Sciences has two main functions. It offers a broad-based education in the social sciences, professional work in such fields as film, radio, television, law, writing, public relations and advertising. It also offers a range of courses in the field of humanities and social sciences, including philosophy, psychology, sociology, anthropology, and linguistics.

The School operates a Media Centre to provide facilities for students in media planning and production and to offer opportunities for project work for advanced students.

A person is sought, who being appropriately qualified, in the field of communication, and in his or her particular field, the person should have an understanding of and expertise in the administration of a School covering a wide range of disciplines. The School is at present the only one in the field of Humanities and Social Sciences, and upon the successful appointment of a person to this position, the School will be able to offer a range of courses in the field of communication, and in his or her particular field, the person should have an understanding of and expertise in the administration of a School covering a wide range of disciplines.

The position carries with it a salary of \$437,181 p.a. Superannuation is available as in a Housing Loan Scheme and a leave allowance is available. The successful candidate will be available to start on 1 February 1981.

Applications should be forwarded to reach the School by Monday, 18th March, 1981, and should include full details of qualifications and experience, and a list of referees. Applications should be addressed to:-

The Official Secretary,
N.S.W. Government Offices,
86 Strand,
LONDON WC2N 6LZ

Invites inquiries regarding

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of Germanic Languages

and the University of Alberta

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Invites inquiries regarding

Union view

Time to end
the finance
fiasco

In the dim distant past there used to be what was called a university quinquennial system of financial allocation.

For those who remember it, the system was intended to allow the universities to plan their academic programmes and their work for a period of five years ahead knowing within reasonable limits what the measure of Government financing was to be.

The past eight to ten years, however, have seen the creation of a situation verging on financial chaos and it is, indeed, almost a miracle that the university system in this country has been able to survive with all the vagaries and shifts in the policies of Government not only towards university financing but towards other matters which impact upon universities.

Whereas at one time over 90 per cent of its income came from a Government block recurrent grant to now only some 75 per cent comes from central funding, the remainder has to be raised through student fees and thus universities' income has the potential of being much more volatile than in the past. Governments also seem to be set

on making changes for the sake of change without arguing the merits of those changes. The decision on overseas student fees was unilaterally imposed in an administratively incompetent way (even if one accepted the principle of charging overseas students what was termed the economic rate) and this does not seem to be the end of the story. Student unions are to be financed out of recurrent grant and although the sums put into the coming year's recurrent grant for this purpose may be known, the amounts are not earmarked and what student unions are going to get to depend upon differing financial states of each and every institution. Again the Government is toying with the idea of introducing student loans and one suspects that part of the administrative burden will be falling on universities.

One could go on with the sorry catalogue of shifts and changes with which the university system is expected to cope. Already universities are being driven into a state of frustration trying to cope with these constant changes and it is a wonder that with their very low level of administrative overheads the universities have managed to just about keep their heads above water. It is not time to cry halt to the lunatic situation that is now arising. This is not a piece of special pleading for the universities—every part of the public sector and the public services and indeed parts of the private sector are being affected by a constant stream of changes dictated by dogma rather than by reason and common sense. The time has arrived when we should say that enough is enough and turn a deaf ear to all proposals for change for the sake of change. Peace and order and the ability to get on with the decent job of work that universities do in spite of Government actions and in spite of the caterwaulings of those who are constantly preaching changes that bear no relation to the realities of what needs to be done.

Laurie Sapper
The author is general secretary of the Association of University Teachers.

My advice to him—as an old stager—would be to go pretty cool on both ideas.

My worst moment with Tony Crosland was when I admitted I had never heard of Bernstein (Ed Bernstein). I never heard of Bernstein until I read what I suppose was a mock horror which delighted him as much as it exposed me to a Holland Park drawing room full of gaping Bismarck cartoon characters. At the time I was in the 1950s and I was clearly expected from such folk a comprehensive knowledge of Marxist theory and its revisionist critics; at all events, it convinced me of how he really saw himself as Labour revisionist preacher manque determined to replace a faith in public ownership with one in either equality or democracy or both—and not at all as I did—as a rather splendid educational politician who was doing more to change the atmosphere of English education than any other minister since the second world war. In this sense David Lipsey and Dick Leonard have got it right in their editorial in the 1970s. So, Tony, was Agneta: Crosland's Legacy (Cape 1975). The book is dominated by essays of economic revisionists like himself—devotees for the most part who read the Future of Socialism in the 1950s and 1960s and found in Crosland their politico-economic prophet. If Crosland's dreams of growth leading to greater equality never quite matured, he certainly did, becoming an enormously entertaining intellectual and a judicious, improved, marvelously with the years.

The book is a mixture of straight panegyric and scathingly satirical political essays, which I would have liked to have been closer to Crosland's thought and achievements. This is particularly true of Tyrrell Burgess's essay on "Democratic Socialism and Education." It is actually true that the 1944 Education Act created a landmark remarkably apt to Crosland's attempts to see the elements of democracy, liberty and equality into the same mould. Burgess's (oft repeated) thesis is, that too few socialists recognized the structure for what it is, and for what it could be. He says that would have been nice if he had made an assessment of some Crosland techniques during his all too brief responsibility for the education service. He never had long enough in the job. "Crosland boring they all were," he used to complain—longing to be Chancellor of the Exchequer and get back to revisionism. I took the point all too seriously, I think. It is a little too late now to say that. But I do hope that the next time he is in the House of Commons, he will be able to say that he has been a revisionist.

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cut in the recurrent grant of 2 per cent. If this is an example of Government financial perspicacity then heaven help the country's economy. Other major developments impacting upon universities are similarly treated. It is no surprise that proposals for major subject developments do not seem to get anywhere in the past year however, in spite of promises of a swift Government decision, the recommendations of the Finiston Committee seem to be dying a wimping death.

One could go on with the sorry catalogue of shifts and changes with which the university system is expected to cope. Already universities are being driven into a state of frustration trying to cope with these constant changes and it is a wonder that with their very low level of administrative overheads the universities have managed to just about keep their heads above water. It is not time to cry halt to the lunatic situation that is now arising. This is not a piece of special pleading for the universities—every part of the public sector and the public services and indeed parts of the private sector are being affected by a constant stream of changes dictated by dogma rather than by reason and common sense. The time has arrived when we should say that enough is enough and turn a deaf ear to all proposals for change for the sake of change. Peace and order and the ability to get on with the decent job of work that universities do in spite of Government actions and in spite of the caterwaulings of those who are constantly preaching changes that bear no relation to the realities of what needs to be done.

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The author is general secretary of the Association of University Teachers.

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My worst moment with Tony Crosland was when I admitted I had never heard of Bernstein (Ed Bernstein). I never heard of Bernstein until I read what I suppose was a mock horror which delighted him as much as it exposed me to a Holland Park drawing room full of gaping Bismarck cartoon characters. At the time I was in the 1950s and I was clearly expected from such folk a comprehensive knowledge of Marxist theory and its revisionist critics; at all events, it convinced me of how he really saw himself as Labour revisionist preacher manque determined to replace a faith in public ownership with one in either equality or democracy or both—and not at all as I did—as a rather splendid educational politician who was doing more to change the atmosphere of English education than any other minister since the second world war. In this sense David Lipsey and Dick Leonard have got it right in their editorial in the 1970s. So, Tony, was Agneta: Crosland's Legacy (Cape 1975). The book is dominated by essays of economic revisionists like himself—devotees for the most part who read the Future of Socialism in the 1950s and 1960s and found in Crosland their politico-economic prophet. If Crosland's dreams of growth leading to greater equality never quite matured, he certainly did, becoming an enormously entertaining intellectual and a judicious, improved, marvelously with the years.

The book is a mixture of straight panegyric and scathingly satirical political essays, which I would have liked to have been closer to Crosland's thought and achievements. This is particularly true of Tyrrell Burgess's essay on "Democratic Socialism and Education." It is actually true that the 1944 Education Act created a landmark remarkably apt to Crosland's attempts to see the elements of democracy, liberty and equality into the same mould. Burgess's (oft repeated) thesis is, that too few socialists recognized the structure for what it is, and for what it could be. He says that would have been nice if he had made an assessment of some Crosland techniques during his all too brief responsibility for the education service. He never had long enough in the job. "Crosland boring they all were," he used to complain—longing to be Chancellor of the Exchequer and get back to revisionism. I took the point all too seriously, I think. It is a little too late now to say that. But I do hope that the next time he is in the House of Commons, he will be able to say that he has been a revisionist.

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